

Obesity and post-bariatric surgery: in a search for predictive biomarkers

Wednesday, 26 January 2022 09:50 (30 minutes)

The higher cancer susceptibility of severe obese people and the relationship among diet, obesity and gut microbiota are well established. However, the molecular mechanisms that underlie this crosstalk are still under investigation. A chronic low-grade inflammation, oxidative stress and circulating microbial metabolites are common features in obese people. In order to find predictive biomarkers, we carried out a longitudinal study on 36 severe obese patients who had to undergo bariatric surgery (BS, sleeve gastrectomy). The 16S rRNA metagenomics sequencing in stool and saliva sample was performed, before and after intervention. Analyses of i) clinical/anthropometric parameters; ii) circulating inflammatory/oxidative markers; iii) NMR serum metabolic profiles and iv) reverse phase protein array of specific DNA damage response players were also carried out. After BS, a significant increase of alpha and beta diversity and specific changes of microbial composition strongly suggest the restoration of eubiosis. A pro-health profile is also supported by clinical/anthropometric parameters, by the reduction of circulating inflammatory and oxidative markers as well as by the metabolic profiles' changes.

Furthermore, significant variations have been also observed in saliva microbiota. To gain insight into the molecular mechanisms that underlie the obesity-related comorbidities remission, a correlation network will be discussed.

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Session Classification: Sessione